

**Listing of Claims:**

The following listing of claims replaces all previous listings or versions thereof:

1.-5. (canceled)

6. (currently amended) A method of measuring the amount of oxidative stress in an individual, comprising the steps of:

- (a) collecting hematopoietic tissue from said individual;
- (b) measuring the amount of mitochondrial DNA damage in said tissue wherein such damage is indicative of oxidative stress in said individual;

7. (canceled)

8. (previously presented) The method of claim 14, wherein said mitochondrial DNA damage is determined by quantitative PCR.

9. (previously presented) The method of claim 6, wherein increased amounts of oxidative stress are predictive of atherogenesis, hypertension, diabetes mellitis, hypercholesterolemia, degenerative diseases of aging or cancer.

10.-13. (canceled)

14. (previously presented) The method of claim 6, wherein said mitochondrial DNA damage is measured by measuring the amount of DNA damage per length of mitochondrial DNA.

15. (previously presented) The method of claim 14, wherein the DNA damage comprises one or more deletions, insertions or duplications.

16. (previously presented) The method of claim 6, wherein said mitochondrial DNA damage is measured by measuring mitochondrial mRNA production.

17. (previously presented) The method of claim 6, wherein said mitochondrial DNA damage is measured by measuring mitochondrial protein production.

18. (previously presented) The method of claim 6, wherein said mitochondrial DNA damage is measured by measuring changes in mitochondrial oxidative phosphorylation.

19. (previously presented) The method of claim 6, wherein said mitochondrial DNA damage is measured by measuring changes in mitochondrial ATP production.

20. (previously presented) The method of claim 6, wherein said mitochondrial DNA damage is measured by measuring changes in mitochondrial redox state.

21. (previously presented) The method of claim 14, further comprising determining the amount of DNA damage in a nuclear gene in said tissue of interest; and comparing the amount of DNA damage per length of DNA between said mitochondrial DNA and said nuclear gene, wherein a greater amount of mitochondrial DNA damage per length of DNA than nuclear DNA damage per length of DNA is indicative of an increased amount of oxidative stress in said individual.

22. (previously presented) The method of claim 8, wherein said DNA is treated with FAPY glycosylase prior to said PCR amplification for detection of 8-oxo-G-lesion.

23. (previously presented) The method of claim 6, wherein the hematopoietic cell is a white cell.